



The Minuteman Repeater Association

# The Minuteman

Volume 42, Number 4

March 2013



**Membership Meeting ~ Wednesday, March 20 ~ 7 PM**



World Radiosport Team Championship

## **The 2014 World Radiosport Team Championship The Olympics of Ham Contesting!**

<http://www.wrtc2014.org/>

The World Radiosport Team Championship (WRTC) is held every four years and consists of ~50 two-person teams of amateur radio operators competing in a test of operating skill. Unlike most on-the-air competitions, all stations are required to use identical antennas from the same geographic region, eliminating all variables except operating ability. Previous WRTCs have been held in Seattle (1990), San Francisco (1996), Slovenia (2000), Finland (2002), Brazil (2006), and Russia (2010).

**For 2014, this competition will be held right here in New England!** At our March meeting, **Doug Grant, K1DG** and **Dave Pascoe, KM3T** will be giving us the run down on WRTC2014. Both Dave and Doug are on the WRTC2014 board of directors. Doug won gold in the 1990 competition and has won bronze twice in 2002 and 2006. Dave has participated as both a competitor and referee in multiple WRTC's.

**Please join us at the Chelmsford Police Station at 7PM on March 20th.**

Talk-in: 147.27

Directions: **Chelmsford Police Station**

2 Olde North Road, Chelmsford, MA.

The police station is located off of Route 4. Take exit 32 off of US3 and head south on Route 4. Olde North road is the first right after you exit the rotary.

For a map: <http://www.mmra.org/dir/cpd.html>

### Table of Contents

Next Meeting	1	A Request	6
Repeater Info	2	January Meeting	6
President's Corner	3	MMRA Information	7
MMRA & D-Star	3-4	Fleas	8
February Meeting	5		

## **Volunteers Needed for the Boston Marathon - Monday, April 15**

Marathon Amateur Radio Communications is seeking amateur radio volunteers for the Boston Marathon on April 15. People are needed at stations all along the route! For more information or to volunteer, visit <http://www.mmra.org/marc/index.html>

## About the Minuteman Repeater Association

The Minuteman Repeater Association (MMRA) is dedicated to Amateur Radio and public service. The MMRA maintains a large system of repeaters in Eastern Massachusetts.

The MMRA meets (usually) on the 3rd Wednesday of each month from September to June. Meeting times, locations, and talk-in frequency vary and are announced in this newsletter and on weekly nets. Meetings are open to all interested parties. Guest speakers and programs of general interest occur in September, November, January, March, and May. The intervening meetings are also open to all members and are for general business.

The Minuteman newsletter is Emailed one week before each general interest meeting. Members are encouraged to submit articles which can be sent to the editor at [newsletter@mmra.org](mailto:newsletter@mmra.org). The deadline for articles is the last Friday of the month preceding the meeting.

Each Tuesday evening at 8PM the MMRA links most of the repeaters for an open net. The topic is "Technical Information and Other Stuff". Join us!

Membership in the MMRA is open to all radio amateurs. Annual dues are \$25 per individual or \$35 per family. See our website for details.

Email to the club leadership should be sent to [contact@mmra.org](mailto:contact@mmra.org). The MMRA maintains a web site at: <http://www.mmra.org/>

An email distribution list for club members named "MMRA" is at: [www.yahogroups.com/](http://www.yahogroups.com/)

**No part of this newsletter can be copied or posted elsewhere without prior approval from the club. Your cooperation in this matter is appreciated.**

### MMRA QRM Policy

MMRA members and all other operators are strongly encouraged to report repeater activity that does not abide by Part 97 rules or accepted amateur radio practice to the board of directors at [contact@mmra.org](mailto:contact@mmra.org) or via other means.

The most effective way (and probably the only effective way) to deal with an individual causing QRM is to NOT engage that individual on the air. Please include the time and date of any incident. Measures are being taken to make audio recordings of repeater activity.

### Repeater and Frequency Information

Up-to-date information about both MMRA repeaters and affiliate repeaters can be found at

<http://www.mmra.org/repeaters/index.html>

Band	Location	Freq	PL	Call	Linking	
					To Hub 1	To Hub 2
MMRA Voice Repeaters						
10m	Marlboro	29.680	131.8	W1MRA	PTL	PTL
6m	Marlboro	53.810	71.9	W1BRI	PTL	PTL
2m	Boston	145.160	—	W1MRA	D-Star	
	Belmont	145.430	146.2	W1MRA	—	—
	Mendon	146.610		AE1C	FTL	PTL
	Quincy	146.670		W1BRI	PTL	PTL
	Burlington	146.715		KC1US	PTL	PTL
	Weston	146.790		N1BE	PTL	PTL
	Brookline	146.820		K5TEC	—	—
	Marlboro	147.270	W1MRA	PTL	PTL	
1¼m	Hopkinton	223.940	103.5	K1KWP	PTL	FTL
	Quincy	224.400		N1KUG	PTL	FTL
	Weston	224.700		N1NOM	PTL	FTL
	Marlboro	224.880		W1MRA	PTL	FTL
70cm	Lowell	442.250	88.5	K1LVF	FTL	PTL: 446.775
	Weston *	442.700		W1MRA	Network Hub 2 (PTL to Hub 1)	
	Burlington	446.775		W1DYJ	FTL	PTL
	Southboro	449.575		W1BRI	PTL	PTL
	Marlboro *	449.925		W1MRA	Network Hub 1	
33cm	Boston *	927.0625	D244	K1RJZ	PTL	PTL
	Marlboro *	927.700		W1MRA	PTL	PTL
MMRA Other Systems						
	Marlboro	144.390	none	W1MRA	APRS Digipeater	
	???	145.630	146.2	W1MRA	Fox Box	
* Internet	HUB1— 449.925: IRLP node 4133; Echolink					
	HUB2 — 442.700: IRLP node 4136; Connected to 220 Reflector 9124 on Tuesdays					
	927.0625: IRLP node 4977			Normally linked to the NEAR-900 Reflector, 9125. Linked to MMRA via IRLP for the TIAOS net. Normally linked together.		
	927.700: IRLP node 4978					
Notes:	FTL = Full Time Linked (or default state) PTL = Part Time Linked (on schedule or demand) Note — a repeater can be linked to only one Hub at a time.					
PL:	PL is required to prevent interference. .					

**Off The Air**

**Reduced Power and/or Antenna Height**

## **President's Corner ~ MMRA Opportunities / D-Star Update**

**Bob DeMattia — K1IW**

Two outstanding opportunities are coming up for members who would like to get more involved with MMRA.

The first is the MMRA elections. All paid-up MMRA members are eligible to run for our officer or board member positions. Members may have a friend nominate, or may nominate themselves. Send your nomination to the MMRA board at: [contact@mmra.org](mailto:contact@mmra.org).

According to the bylaws, nominations must be received by April 15.

The second opportunity is to provide input and perhaps get involved in technical projects. Our April 10th meeting will be dedicated to people interested in this area. At the meeting, we'll give a brief run down of our existing systems. We'll be looking for input on where things need to improve. We will also be looking for people that would like to get involved.

### **The Scoop on the Pru**

Unfortunately, and due to circumstances beyond our control, the proposed "all

mode" repeater from Newfield Design is highly unlikely to happen. At the February meeting, the MMRA board voted to relocate the 146.82 analog repeater from Brookline to the Prudential site. We are hoping to have this completed in time for the Boston Marathon public service activity. To minimize the impact of the high RF environment at the Pru, 146.82 will be fitted with a new link radio that has multiple channel capability. If all goes well, this radio will provide the linking to HUB1 and HUB2 in a traditional manner. If we continue to have RF problems, the link radio will become an auxiliary link receiver so that we can have one or more remote receiver locations and keep only the '82 transmitter on the Pru.

As for Brookline, the MMRA plans to maintain a presence at this site. One current proposal is to purchase our own D-Star controller and put the 145.16 equipment in Brookline. MMRA still owns the RF components and computer components of this system. Dave, KG1H, has written an article supporting this proposal which appears below.

## **MMRA and D-Star**

**David Wolfe ~ KG1H**

Currently, there is a major gap in D-Star coverage in eastern Massachusetts that needs to be closed.

D-Star coverage is essentially non-existent in the Boston area and along the I-90 and I-95/128 corridors and in the surrounding towns and cities. The nearest D-Star repeater/gateway, which belongs to WB1GOF Police Amateur Radio Team (PART) in Westford MA, is located on the water tower at Prospect Hill in Westford and does not cover these areas. The top of the tower antenna elevation is 579 feet/AMSL. The D-Star transmitters, which are located in the AT&T CELL site, run 18 watts on both 145.330 and 442.450. The coverage map at the URL below illustrates the gaps in their coverage, although it is adequate for WB1GOF PART's needs.

<http://ka8scp.wb1gof.net/images/GOF442450CoveragePlot.jpg>

Continued next page

## **MMRA and D-Star ~ continued**

**David Wolfe ~ KG1H**

Coverage in the outlying areas gets worse when the trees have their leaves. According to the web page below, there are only four D-Star repeaters in Massachusetts connected to the internet which is needed to link to other gateways and reflectors:

<http://www.D-Starusers.org/repeaters.php>

Hams in the area, like myself, got interested in D-Star when the MMRA promoted installation several years ago of a D-Star repeater/gateway at the top of the Prudential Center. This installation was to provide wide coverage filling in the gaps giving me (and others) a valid excuse to visit the candy store to purchase a new D-Star mobile transceiver; and later an HT. However, the intense RF environment at the top of the Pru, complicated by very restricted personnel access to the equipment, resulted in the MMRA removing their equipment.

At a recent MMRA meeting Newfield Design Inc. presented a promise of a revolutionary Repeater Controller that delivers a new level of capability that can operate in both Analog and D-Star mode with a wide range of capabilities and options that would operate in that environment. However, this is no longer a valid option due to mitigating circumstances beyond MMRA's control.

It appears now that the only option to fulfill MMRA's proposition to the D-Star users is to install a D-Star repeater/gateway in a less intense RF environment that is accessible by MMRA personnel, and provide a coverage footprint that fills in the gaps. *This option requires that the MMRA purchase an ICOM 2 meter D-Star repeater controller costing around \$1500.*

### **D-Star 101**

As part of the D-Star (Digital Smart Technologies for Amateur Radio) protocol, linking is an inherent feature. Linking is accomplished by the repeater controller, the gateway server and just recently the reflector. The Internet gateway allows you to relay your call to a remote D-Star repeater over the Internet. A reflector can be considered to be simi-

lar to a repeater, but with no RF capabilities. Reflectors are Internet connected servers, generally in data centers, which receive a transmission from a connected gateway (via the Internet) and send it out to all other connected gateways for retransmission, via RF in the case of a repeater. The term gateway is used in the broader sense, which includes devices such as dongles and DV Access Point Dongle (DVAP).

The DVAP connects to your PC or Intel based Mac via a USB port and provides a 2 meter Access Point (a miniature D-Star repeater) for use with a D-Star radio. The DV Dongle on the other hand does not require a D-Star radio but connects to your PC or Apple Mac via a USB port and in conjunction with a computer headset provides encoding and decoding of compressed audio using the DVSI AMBE2000 full duplex vocoder DSP chip. AMBE technology is used in all D-Star radios to provide efficient voice transmissions.

While on vacation, I use my DVAP, ICOM 92AD HT, and laptop connected to the hotel Wi-Fi's to link into D-Star repeaters/gateways and reflectors worldwide.

Reflectors are basically a conference bridge for D-Star. They allow multiple D-Star repeaters and Dongle users, from around the world, to be joined together. Whatever information is transmitted across one of the repeaters is repeated across all of the connected repeaters.

The D-Star protocol is open and freely available, developed by the Japanese Amateur Radio League (JARL). However, the AMBE voice encoding scheme currently used by the D-Star protocol is not open, rather it is patented by DVSI, Inc.

Currently there are over 20,000 World Wide Registered D-Star Users communicating over 1000 gateways.



## **MMRA February Business Meeting**

**Bob Evans ~ N1BE ~ Clerk**

THE MMRA Board met for a business meeting 7 PM at the Southborough House of Pizza on February 13th. Present were K1KWP, K1IW, W1BRI, N1NVK, KG1H, N1BE and N1YAZ. The following items were discussed.

We began with a report of the treasury from K1KWP. Looking at historical data and expectations for the current fiscal year, this covered income, spending and balance in our account. Reported was \$1500 in significant expenses paid since the previous MMRA business meeting. There is about \$400 in routine expenses still expected this year. We also have approved but not yet spent funds allocated to purchase repeater equipment at Belmont from the widow of WA1RTT and for the Sligo tower project. The number of members and income from dues is at parity with the previous fiscal year.

K1IW next informed us of the state of the Sligo tower project at MRW. Marlborough is still undecided about whether to approve the current cone at the top of the tower. Until that occurs, no tenant/user is authorized to re-install equipment on the tower. It is possible that we will not have the opportunity to complete the project before the \$6400 of MMRA authorized funds expires on May 31. In that event the Board will ask the members to re-authorize this expense for the next fiscal year.

We next discussed the possibility to obtain a VYEX DAB to upgrade one of the 7K repeater controllers. These scarce boards are a newer voice module with a serial port that allows remote control and programming via a computer instead of needing to use touch tones. An SCOM7K w/VYEX DAB is now available for \$350. This fits with an earlier Board discussion to replace existing 7K-SSM modules with DAB. K1IW suggested we purchase the 7K with DAB,

put it into service and then sell one of our 7K controllers which has the older SSM.

The Board authorized K1IW to spend up to \$350 to buy a 7K with DAB. There are a few different sites that could benefit from the DAB. Likely it will get installed at a site where internet is available and where tone access is difficult.

The Board authorized selling all 5K controllers in stock and two 7K controllers that will be excess after the DAB upgrade.

We next discussed developments at the Prudential Center Repeater site. Due to unfortunate events in Maine, the digital repeater is very unlikely to become available for use at this site. With the hostile RFI and difficulty to get access at this site, the Board thought an analog repeater would be a more reliable choice for this location.

The Board authorized spending not to exceed \$250 to move 146.82 to the Pru and to provide remote control via the Internet. This expense is for a multi-channel link radio and hardline to reach the different location where the repeater would be installed. This will provide an option to add remote receivers in the future.

The changes at the Pru leave us without a D-Star repeater. The Board was indecisive about whether to make an unexpected investment in D-Star. We approved a motion to ask the membership whether to authorize \$1500 to purchase a D-Star controller for 145.16 and install that at Brookline with the other repeater parts already in hand. This is a significant expense for the club, so the Board wants members to carefully consider their vote.

The Marlborough Flea Market is in three days from our meeting on February 16. We are still soliciting people to staff a MMRA table there.

Finally we discussed an election slate of officers for next year. All current officers and the directors up for election in May have confirmed they are willing to run for reelection. Therefore the Board will not form a nominating committee. However, we solicit additional nominations from any MMRA members that would like to be more involved with governance of our club. Nominations are due to the MMRA secretary by April 15th.

The meeting adjourned at 8:24 PM.

### **Next Business Meeting**

**Wednesday April 10, 7PM**

**Tech Project Planning Meeting**

This will be an informal get together for those interested in helping out with technical projects. Please RSVP to contact [at] MMRA [dot] org for this meeting so we can get an idea of the attendance size.

Please join us at the Campion Center, Weston, MA at 7PM on April 10th.

## ***A Request from Jon Titus ~ KZ1G***

Design News magazine, a professional publication and Web site for mechanical and electrical engineers, runs a regular fun "Gadget Freak" section that highlights interesting home-brew projects such as a gopher chaser, automatic pet feeder, clock drive for a telescopic camera (astronomy), Christmas-lights controller, wind generator, telephone-alert circuit, critter-tracking Nerf gun, and so on. We could use more gadgets from hams. MMRA members can find more examples at: <http://www.designnews.com/gadget-freak.asp>.

**Design News pays \$500 per published Gadget Freak project**, which is nice money to have for ham gear, lab supplies, workshop tools, and so on. The magazine editors consider GF submissions "open source" so others can recreate a project, adapt it, or use parts of it as they choose. People should not submit commercial products, or patented/patent-pending designs. A project built from a schematic diagram or plans in QST wouldn't qualify either.

If MMRA members need more information, or want to submit a project--small or large--please send me an email with a short description and a photo. Or call.

Cheers. Please say Hi to members for me. (I belonged to the MMRA until my wife and I moved to Utah in late 2005. Some of the "old timer" members might remember me. I think I'm in one of the fox-hunt photos that rotate through on the MMRA home page.)

Jon Titus, KZ1G  
Contributing Technical Editor  
Design News Magazine  
5526 W 13400 So., Suite 105  
Herriman, UT 84096-6919 USA  
801-446-8882  
[jontitus@comcast.net](mailto:jontitus@comcast.net)

**MMRA member George Maier – W1LSB featured in Bob Heil's Ham Nation web-cast. Check it out!**

<http://twit.tv/show/ham-nation/81>

### ***From the January meeting:***



## 2012—2013 Meetings

19 September — Membership Meeting  
Bob Stone, N1KMA of Newfield Design  
Holiday Inn, Boxborough, MA ~ 7:00 PM

17 October — Business Meeting  
Stratus, Maynard ~ 7:00 PM

14 November ~ Membership Meeting  
Donna Halper ~ A Short History of Broadcast Radio in Boston  
Tatnuck Bookseller, Westborough ~ 7:00 PM

19 December ~ Business Meeting  
Northborough Public Library ~ 7:00 PM

16 January ~ Membership Meeting  
Technical Evolution in Disaster Communications & Free Pizza Night  
Northborough Public Library ~ 7:00 PM

13 February ~ Business Meeting  
Southborough House of Pizza ~ 7:00 PM

20 March ~ Membership Meeting  
WRTC 2014 ~ Dave Pascoe KM3T & Doug Grant K1DG  
Chelmsford Police Station ~ 7:00 PM

10 April ~ Business Meeting  
Tech Projects Planning Meeting  
Champion Center, Weston

22 May ~ Membership Meeting  
Annual Meeting & Elections  
Northborough Public Library ~ 7:00 PM

19 June ~ Business Meeting  
Stratus, Maynard ~ 7:00 PM

17 July ~ Summer Get Together  
Location TBA

21 August ~ Business Meeting  
Location TBA

## Don't Forget!

Every Tuesday @ 8 PM

### Technical, Informational and Other Stuff Net

The MMRA's repeaters are linked Tuesday nights for the TIAOS Net. Join us! This is a good way to keep up with what is happening in the MMRA and ask your ham related questions.

If you would like to try your hand at Net Control contact me at [W1DYJ@mmra.org](mailto:W1DYJ@mmra.org) — we have a script you can use.

#### Current Net Control Operators:

Week 1	WA1JIM	Jimmy Devaire
Week 2	W1DYJ	Larry Banks
Week 3	KQ1Y	Tim Wortley
Week 4	K1KWP	Kevin Paetzold
Week 5	W1DYJ	Larry Banks

To connect using the digital modes during the Net:

- Echolink node \*NEW-ENG2\* (9127)
  - THIS HAS RECENTLY CHANGED
- IRLP node 4133

## MMRA Leaders

### Officers

President	Bob DeMattia	K1IW
Vice President	Steve Telsey	N1BDA
Secretary	John McGovern	W1JMC
Treasurer	Kevin Paetzold	K1KWP
Clerk	Bob Evans	N1BE
Technical Officer	Bryan Cerqua	W1BRI

### Board of Directors

Director »2014	Clark Conti	N1NVK
Director »2014	Mike Neilsen	W1MPN
Director »2013	Steve Schwarm	W3EVE
Director »2013	Roger Coulson	WA1NVC

### Repeater Trustees, Appointed

Boston 927.0625	Rick Zach	K1RJZ
Brookline 146.820	Bob Phinney	K5TEC
Burlington 146.715	Bruce Pigott	KC1US
Burlington 446.775	Larry Banks	W1DYJ
Hopkinton 223.940	Kevin Paetzold	K1KWP
Lowell 442.250	Vince De La Flor	K1LVF
Marlboro 53.810; Quincy 146.670; Southboro 449.575	Bryan Cerqua	W1BRI
Marlboro 144.390, 147.270, 224.880, 449.925, 927.700		
Belmont 145.430; Weston 442.700 — all as W1MRA		
Mendon 146.610	Bill Northup	N1QPR
Weston 146.790	Jim Podsiadlo	AE1C
Weston 224.700	Bob Evans	N1BE
	Eddie Mulhern	N1NOM

### Appointed, non-Voting

Newsletter Editor	Larry Banks	W1DYJ
Emergency Coord.	Kevin Paetzold	K1KWP
Public Service Coord.	David Wolfe	KG1H
VEC Liaison	Bill Wade	K1IJ
Net Manager	Larry Banks	W1DYJ
Web Page Editor	Bob DeMattia	K1IW

Previous issues of the MMRA Newsletter are available at:

[www.mmra.org](http://www.mmra.org) → [Newsletter Archive](#) (on the left)

## MMRA VE Sessions

3rd Saturday of each Month  
9 AM at the Marlboro Public Library

Contact: Bill Wade, K1IJ 781-891-9079  
Evenings 6 - 10 PM Weekends 8 AM to 10 PM.  
Accredited by the ARRL VEC

**Membership Meeting ~ Wednesday, March 20 ~ 7 PM**

**The 2014 World Radiosport Team Championship**  
**The Olympics of Ham Contesting!**

Please join us at the Chelmsford Police Station at 7PM on March 20th.

**Calendar of Ham Radio Flea Markets**

See this web site for more information: <http://mit.edu/w1gsl/Public/ne-fleas>

2 Mar	Feeding Hills MA MtTARA	21 Apr	Cambridge MA FLEA at MIT
3 Mar	Hicksville NY LIMARC @LevitHall	28 Apr	Manchester CT NEWS V/UHFConf
10 Mar	Henniker NH CVRC @CommSch @8	3,4 May	Deerfield NH NEARFest XIII @FG
16 Mar	Dayville CT ECARA 8A @StJosephCh	11 May	Dartmouth MA SEMARA @Clubhouse
16 Mar	N Conway WMARC @CommCtr	11 May	E Greenbush NY EGARA @FireCo
23 Mar	Laval PQ CRAL-L @VanierHS	1 Jun	Hermon ME PSARA @HS
29,30 Mar	Lewiston ME AARC ME Conv @Ramada	1 Jun	Windsor CT VR+C Mus 115 Pierson LN
7 Apr	Southington CT SARA @HS	1 Jun	Goshen CT So.BARC @FG
7 Apr	Framingham MA FARA@KeefeTech	2 Jun	Bethpage NY LIMARC
13,14 Ap	Wakefield MA Photographica	15 Jun	Newington CT NARL @StMarySch
14 Apr	Middletown NY OCARA @CommCtr	30 Jun	Queens NY HOSARC
20 Apr	Gales Ferry CT RASON Auction@Fire	7 Sep	Ballston Spa NY SCRACES @FG
20 Apr	Portland ME PAWA @AmLegion	7 Sep	Windsor CT VR+C Mus 115 Pierson LN
20 Apr	Brookline NH NEARC Antique	8 Sep	Newtown CT CARA @TownHall

THE MINUTEMAN REPEATER ASSOCIATION

MMRA  
P.O. Box 669  
Stow, MA. 01775-0669

Email: [contact@mmra.org](mailto:contact@mmra.org)



WE'RE ON THE WEB  
[HTTP://WWW.MMRA.ORG/](http://www.mmra.org/)